

**IN THE UNITED STATES DISTRICT COURT  
NORTHERN DISTRICT OF GEORGIA  
ATLANTA DIVISION**

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**DONNA CURLING, ET AL.**

**Plaintiffs,**

**v.**

**BRIAN KEMP, ET AL.**

**Defendants.**

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**Civil Action  
No. 1:17-cv-02989-AT**

**CURLING PLAINTIFFS’ POST-HEARING STATEMENT AND  
RESPONSE TO DECLARATION OF REBECCA SULLIVAN**

Yesterday’s hearing only confirmed the critical need for this Court to grant the Curling Plaintiffs’<sup>1</sup> motion for preliminary injunction (Dkt. No. 260), to enjoin Defendants from depriving Plaintiffs—and all other Georgia voters—of their constitutionally-protected right to vote. Plaintiffs’ witnesses, including leading cybersecurity experts in the field of election security<sup>2</sup>, confirmed that the Georgia election system, which relies on paperless electronic voting machines (“DREs”), is not secure against cyber-intrusions by sophisticated hackers—and *may already be compromised*. Defendants’ witnesses, meanwhile, did nothing to assuage those

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<sup>1</sup> The “Curling Plaintiffs” are Donna Curling, Donna Price, and Jeffrey Schoenberg.

<sup>2</sup> To be precise, the Court found Prof. Halderman to be an “expert computer science engineer with a background in voting technology.” (Dkt. No. 298).

concerns and instead revealed new information confirming the extraordinary and readily-exploitable vulnerabilities in the current system. Defendants’ witnesses also were forced to admit that they in fact *could*—and would—implement a paper ballot system, *including counting those ballots even if all received on Election Day*, were this Court to grant the motion for preliminary injunction.

In the end, Defendants’ objections and intransigence in the face of virtually unanimous findings that the current system is unsecure and faces sophisticated, ongoing, pervasive hacking attempts boil down to the complaint that it will be costly and difficult to proceed only with paper ballots now. But burden and expense are not sufficient reasons to deprive Georgia voters of the “constitutionally protected right ... to have their votes counted” and to allow Russia or other hackers to choose Georgia’s next governor or any other candidate. *Reynolds v. Sims*, 377 U.S. 533, 554, (1964) (citing *United States v. Mosley*, 238 U.S. 383, 386 (1915)).

***Defendants’ Own Witnesses Confirmed That  
An All-Paper Ballot Election Is Feasible At This Time***

Chris Harvey, the State Elections Director, confirmed that if every voter in the state of Georgia were to exercise what Defendants themselves characterize as an “unlimited right” to vote by *paper* absentee ballot and were to do so in the *final few days approaching Election Day*, the state and counties could—and would—count all those ballots within the time allotted to certify the election results.

Prof. Alex Halderman explained that this is far from infeasible given Georgia currently has 891 optical scanners (Dkt. No. 265-2 ¶ 20) that typically scan each ballot in only about *three seconds*. As he showed, assuming, consistent with prior elections, about half of Georgia's 6.7 million registered voters vote this fall, all those paper ballots could be scanned in a *few hours* with Georgia's existing inventory of optical scanners. And even assuming it were to take multiples of that time to account for delays that Defendants claim could arise during the scanning process, that still would leave ample time to count the ballots during the *14-day* window the Secretary of State has to certify the election results after Election Day. O.C.G.A. § 21-2-499(b). Moreover, given Defendants acknowledge that about half of voters typically vote during Early Voting, beginning October 15, and about ten percent typically vote by mail-in paper absentee ballot (Dkt. No. 265-2, ¶ 7), this means much less than half the paper ballots cast would be received on Election Day to be counted during the 14-day window that follows. Defendants' claim that paper ballots could not be counted with existing equipment this fall has been thoroughly debunked. Neither did Defendants offer any evidence to substantiate their speculative claims that they *might* not be able to obtain sufficient paper ballots—which, notably, stand in stark contrast to their repeated admission that they are obligated to provide every voter in the state a *paper* absentee ballot if

every voter chooses to exercise that “unlimited right” (to avoid the inherently unreliable DREs in the current high-risk environment).

Defendants’ other argument against the feasibility of an all-paper-ballot election this year is that the state and counties purportedly are not equipped to handle paper ballots at the polls. This too was debunked. Former Secretary of State Cathy Cox, who adopted the current DRE-based system, admitted that the *legislative* “fail safe” (her own words) for when DREs are not used is *paper ballots*. Moreover, Plaintiffs showed that existing Georgia law already requires paper ballots *at the polls* on Election Day. *See* O.C.G.A. § 21-2-418(h).<sup>3</sup> And of course, again, Defendants themselves acknowledge that every voter has an “unlimited right” to vote by paper absentee ballot, and hundreds of thousands of voters already do. Thus, election workers across the state *already* must be trained to handle paper ballots—and the state and counties *already* must have in place

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<sup>3</sup> Although the paper ballots currently provided at the polls typically are “provisional ballots,” Georgia law mandates that those very same paper ballots shall *not* be considered “provisional ballots” if electronic voting equipment is not used. O.C.G.A. § 418(h). Thus, the polls already are statutorily required to possess, process, secure, and otherwise handle paper ballots at the polls throughout Early Voting and on Election Day. The requested relief would increase the volume of paper ballots cast but would not require substantially new or different processes to handle those ballots, *except to make the process much easier* insofar as provisional ballots require special, ballot-specific procedures for securing and counting those ballots that would not be needed for non-provisional paper ballots.

rules and procedures for the handling of paper ballots—at the polls and throughout the election cycle.

The newly-submitted testimony of Ms. Rebecca Sullivan, Vice-Chair of the State Election Board (“SEB”), fails to support Defendants’ objections to the requested relief. She merely describes the rule-making process *under normal circumstances*. She is tellingly silent on the SEB’s authority and capacity to make rules under emergency circumstances, such as imminent hacking of the statewide election system that would deprive Georgia voters of their constitutional right to vote. *See, e.g.*, O.C.G.A. § 50-13-4(b) (permitting an agency to adopt emergency rules without prior notice or hearing); O.C.G.A. § 50-5-71 (granting emergency purchasing authority to any state officer or board). Surely if it were confirmed that the system already were compromised, the SEB could—and would—take immediate steps to adopt any and all rules needed to provide a safe and secure election throughout the state, which would necessitate forgoing DREs since they could not possibly be secured before the election (if ever).

The SEB is not as helpless as Defendants’ counsel would have this Court believe. Indeed, the most Ms. Sullivan could bring herself to say in the end is that if this Court were to enter the proposed injunction now, “it should not be presumed that the S.E.B. could, through legislation alone, ensure the safety and security of

the upcoming election within such a limited timeframe.” (Dkt. No. 297-1, ¶ 16.)

This statement is a far cry from any claim that it *could not* get done—nor does she say that it could not get done. Because it surely could, and would, if needed.

Further, the Secretary of State is empowered to make any necessary changes absent rulemaking by the State Election Board, as he is statutorily conferred with the authority to determine the voting equipment that will be used throughout Georgia. *See* O.C.G.A. § 21-2-50. Thus, Georgia’s Attorney General has advised: “Georgia’s Constitution and Election Code make it amply clear that the Secretary is charged with the primary responsibilities required to enforce the state’s election laws. There is no indication in the law that the constitutional and statutory authority of this officer should be limited or substantively controlled by a board of political appointees who are not answerable to the electorate for their actions.” Ga. Att’y Gen. Office, Op. No. 2005-3, 2005 WL 897337, at \*6 (Ga. A.G. Apr. 15, 2005).

Ms. Sullivan opines that “[d]isorder and confusion are the enemies of Georgia’s election officials.” (Dkt. No. 297-1, ¶ 14.) She is mistaken. Russia and other sophisticated hackers are the enemies of Georgia’s election officials and all Georgia voters in today’s environment. (Dkt. No. 260-1 at 8-10.) Those are far greater enemies presenting a far greater threat to the upcoming elections than

vague and speculative concerns over disorder and confusion, which no doubt the many hard-working election officials and workers across the state could and would effectively manage. In fact, not a single witness in yesterday's hearing or in any declaration submitted by Defendants ever once testified that the state and counties *could not* comply with the injunction the Curling Plaintiffs seek. This disposes of Defendants' objections.

***The Record Irrefutably Establishes That  
Georgia's Election System Is Hopelessly Insecure  
And Potentially Already Compromised***

There can be no doubt that Georgia's current election system is unsecured and readily susceptible to hacking that could influence or even dictate the election results this fall. Prof. Halderman demonstrated in the courtroom just how easily a well-intentioned poll worker could unknowingly infect a DRE by following normal procedure to insert the memory card into the machine that each one needs to function in the election. *Unbeknownst to the poll worker*, that memory card could easily contain malware that would, as Prof. Halderman demonstrated, literally determine the winner of any or all races in the election. And no one would ever be the wiser (except the hackers).

Defendants' only defense to this reality *had* been that the network that is used to manage the DREs and the software ultimately installed on each for the

election is “air gapped” and thus secure. This proved to be untrue—and perhaps equally concerning was the revelation that those entrusted with securing that system fundamentally do not understand what is required to do so and how easily sophisticated hackers can infiltrate a system that is not truly air gapped. Michael Barnes, the Director for the Center for Elections, admitted that he personally regularly connects a USB drive to the GEMS network that he also connects to his own “public facing” computer, which is connected to the internet and *which he uses for email*. Richard Barron, Fulton County’s Director of Registration and Elections, admitted that Fulton County’s GEMS network has *its own “modem” and has “phone lines” connected to it*. These systems cannot be considered reasonably secured, much less air gapped. Yesterday’s hearing revealed—in devastating and disturbing detail—that the vulnerabilities Logan Lamb found in 2016 and 2017 are merely the tip of the iceberg and that Georgia voters can have no confidence that any vote cast on any DRE will be counted as they intended rather than as Prof. Halderman demonstrated before this Court’s very own eyes.

It has long been a curious and gaping omission in Defendants’ submissions to this Court that they omitted any testimony of any cybersecurity expert to defend the current system and support their arguments. We now know why—because Defendants’ own officials and chosen cybersecurity expert agree that the system is



indefensible. Mr. Barron stated recently: “I do not find it defensible to keep defending year 2000 software.”<sup>4</sup> Meanwhile, he one and only cybersecurity expert Secretary Kemp himself selected to serve on and advise the so-called SAFE Commission—Defendants’ singular example of the purported efforts made to address the failings in the current system—has confirmed the vulnerabilities in the current system and the need for paper ballots with appropriate auditing. Prof. Wenke Lee is the John P. Imlay Jr. Chair of the Computer Science Department at Georgia Institute of Technology and Co-Executive-Director of the Institute for Information Security & Privacy. In his presentation to the members of the SAFE Commission on August 30, 2018, he confirmed the testimony of Plaintiffs’ experts and the serious threat facing Georgia voters today:

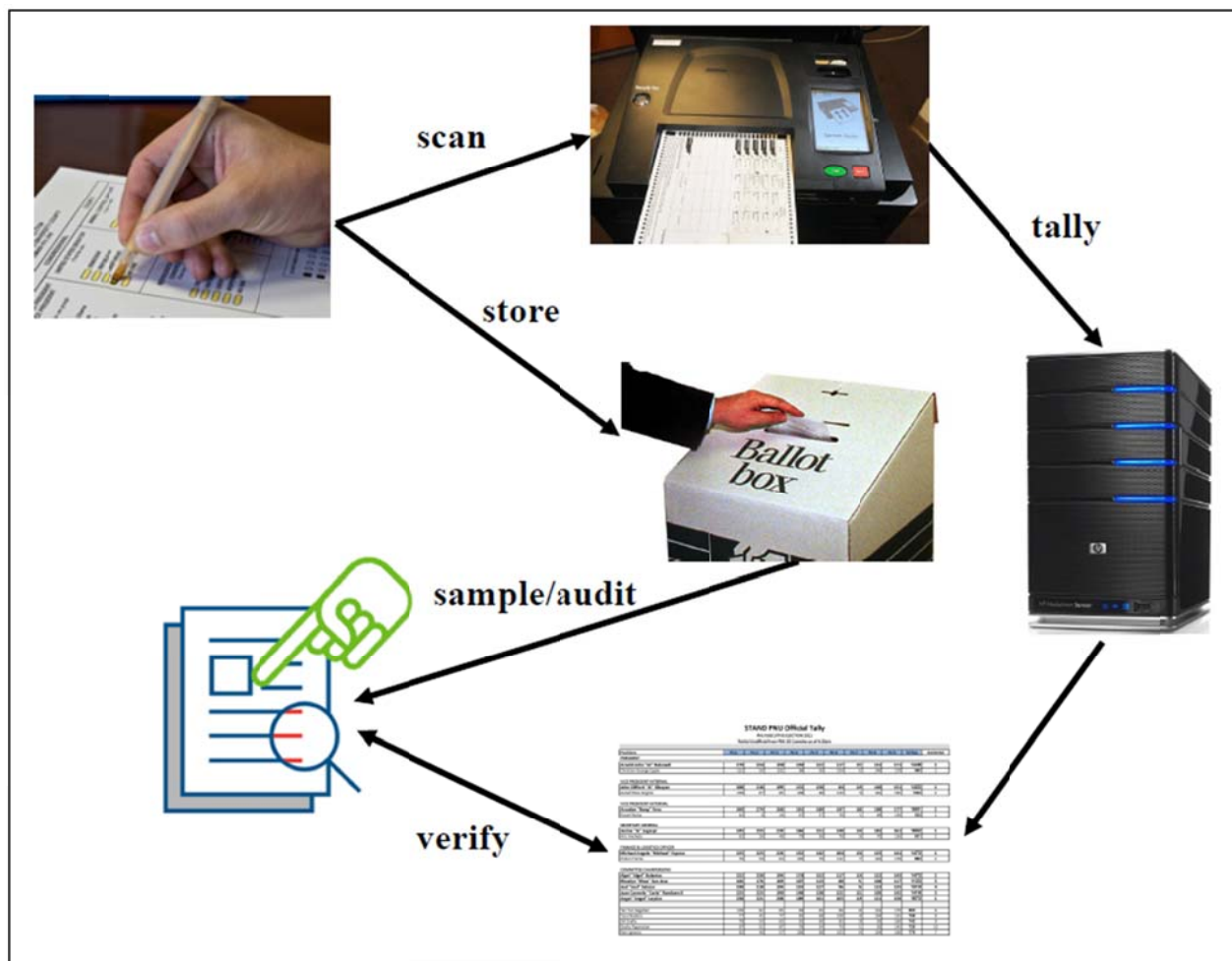
- The question regarding hacking Georgia’s paperless electronic voting system is “[n]ot if but when.” Ex. 5 at 5.
- “Advanced Persistent Threats,” which Prof. Richard DeMillo explained are a relatively recent cybersecurity threat, “[c]overtly spread” in such a way that “[t]he malware may choose to remain undetected and ... spread to other systems by taking advantage of unpatched vulnerabilities or using hijacked credentials.” *Id.* at 7.
- In any system with a “cyber component,” “we can’t guarantee no vulnerability.” *Id.* at 8.

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<sup>4</sup> “State launches investigation of Fulton County election,” Fox News5 (Apr. 19, 2017), <http://www.fox5atlanta.com/news/fulton-county-experiences-data-issue-while-counting-votes>.

- It is unrealistic to “keep away would-be attackers” because “the cyber world is VERY connected” and can infiltrate systems that are not connected to the internet (i.e., “‘disconnected’ system”) “via media,” (just like the removable media (USB drive) Michael Barnes connects to both his internet-connected, “public facing” computer and the elections network that includes the GEMS server). *Id.*
- “*Don’t use the same system for more than a few years.*” *Id.* at 17 (emphasis in original).
- “Voter confidence” requires an election system to possess the following critical characteristics: “Verifiably cast-as-intended, Verifiably collected-as-cast, Verifiably counted-as-collected.” And “[a]ny cyberattack can erode voter confidence.” *Id.* at 12 (emphasis in original).
- The recommended “[s]pecification and design” for a secure election system “requires other trail of evidence (that cannot be affected by the software).” *Id.* at 13.
- “Paper ballots” provide “[d]urable evidence to determine correct election outcome” and “[s]tatistics and auditing” are needed, including “strong statistical evidence that the election outcome is correct.” *Id.* at 14.
- Only “[p]aper ballots done right – with auditing, will accomplish” the characteristics required for voter confidence in the election system. *Id.* at 15.

Ultimately, Prof. Lee, the local, Georgia cybersecurity expert whom Secretary Kemp entrusted to serve on the SAFE Commission, recommends paper ballots with optical scanners and an appropriate audit of the paper ballots (*which must be the ballot of record*):



*Id.* at 16. This is precisely what the Curling Plaintiffs are seeking in their motion for preliminary injunction.

Every cybersecurity expert who has examined the voting machines and network used to manage those machines and the elections system in Georgia has concluded that it is fundamentally unsecure and unsafe, especially in today's environment of sophisticated nation-state hackers and ongoing, pervasive attacks on U.S. elections by Russia and possibly others. Defendants offer nothing in

rebuttal except the testimony of Michael Barnes and Richard Barron, neither of whom has any expertise in cybersecurity, information technology, computer science, or computer programming, and who revealed frightening ignorance about securing an electronic voting system, especially one that relies on paperless, electronic voting machines. The record supports only one conclusion: the Georgia state election system, including the DREs that rely on that system for programming and security, is hopefully unsecure and potentially already compromised given the vulnerabilities Mr. Lamb found and that Messrs. Barnes and Barron revealed at the hearing. Notably absent from Defendants' arguments and submissions is any evidence or even allegation that any forensic (or any other reliable) analysis has been conducted of that system, including the servers, DREs, removable media, and other connected devices, to ensure that it is not already compromised. This is fatal.

Under the circumstances now evident in the record, it unquestionably would constitute a serious deprivation of the constitutional right to vote to force the Curling Plaintiffs—and any other Georgia voters—to vote in the current, DRE-based system or to otherwise cast their ballots in any manner other than paper ballots. The U.S. Supreme Court has emphasized that the right to vote includes the right of “qualified voters within a state to cast their ballots and *have them counted.*” *United States v. Classic*, 313 U.S. 299 (1941) (emphasis added). All

Georgia currently offers—and can offer—is the right to cast a ballot. Once cast, each voters’ vote disappears into the inner workings of black-box DREs that are easily hacked—even without ever being connected to the internet or physically compromised—which leaves no confidence that any vote is “counted” as cast and as required by the U.S. Constitution and Georgia law. This is dispositive and mandates the proposed injunction by this Court.

***Defendants’ Attacks On Paper Ballots Are  
Misguided, Exaggerated, And Irrelevant***

The Court need not devote significant attention to Defendants’ attacks on paper ballots for two primary reasons. First, as former Secretary of State Cathy Cox acknowledged, paper ballots are the “fail safe” that the *legislature intended and provided for in existing Georgia law* when DREs are not used. *Chris Harvey acknowledged the same thing in his letter to county officials across the state*, stating that the Secretary of State’s Office would authorize paper ballots should DREs prove unreliable—and indeed they have. Exhibit 6; Doc. 258-1, at 103-104. Thus, Defendants’ quibbling about challenges with paper ballots is legally irrelevant: they are required by law to use paper ballots when DREs are not used. Full stop. Whatever challenges may arise with paper ballots, the legislature, in its judgment, already decided as a matter of law that they are insufficient to render paper ballots unreliable and thus unacceptable when DREs are not used. Indeed,

the legislature had the good foresight to ensure that paper ballots would be used in the event DREs simply become “impracticable.”<sup>5</sup>

Second, Defendants repeatedly admit that every voter in the state has an “unlimited right” to vote by paper ballot through the absentee system. For that actually to be a real right available to all 6.7 million registered voters, the state and counties must be equipped to handle paper ballots cast by all registered voters, even if all were cast at the last possible minute on Election Day.

Thus, under the existing law, as acknowledged by Defendants and their own witnesses, the state and counties already are legally required to provide paper ballots to all voters at the polls if and when DREs are not used. Thus, the only question before this Court is whether DREs have become “impracticable” in light of the serious vulnerabilities that have been confirmed with those machines and the network on which they rely for programming and security, in an environment where nation-states have deployed legions of sophisticated hackers to infiltrate

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<sup>5</sup> Although on direct examination, Ms. Cox testified that this applies only to “voting machines,” which she said (without substantiation) does not include DREs, she admitted on cross examination that other Georgia statutes that authorize the use of paper ballots do not use the term “voting machines” and therefore are not limited by whatever that term means. She admitted that O.C.G.A. § 21-2-281, for example, provides for the use of paper ballots when “electronic voting equipment”—which certainly includes DREs—cannot be used. And she admitted that at least one statute expressly provides for the use of paper ballots when DREs are not used. O.C.G.A. § 21-2-418(h).

U.S. elections and affect the outcomes. It is difficult to imagine circumstances under which DREs could be more impracticable than those Georgia now finds itself in. Since Georgia election officials have refused to—and insisted they will not, absent relief from this Court—comply with Georgia law providing for the use of paper ballots under the current circumstances, which have rendered DREs impracticable (to put it mildly), it falls to this Court as the last and only resort to effectuate the intention of the Georgia legislature and to protect the constitutional right to vote in Georgia by mandating paper ballots in lieu of electronic voting machines (with appropriate auditing) across the state.

Lastly, it bears noting that Defendants’ gripes regarding paper ballots largely are not even unique to paper ballots and actually highlight the need for paper ballots. For example, Ms. Cox testified that paper ballots have been stolen from locked vaults and ballot boxes. This suggests that the “locked rooms” and “locked DREs” that Defendants heavily emphasized—and virtually exclusively rely on to defend the “security” of the current system—are unlikely to keep out those who seek to interfere with the election. And unlike with paper ballots, where one can actually see that they have gone missing or been altered, there is no way to detect the stealing or alteration of votes in DREs, as Prof. Halderman demonstrated. Thus, Defendants’ objections to paper ballots are not only contrary to the

legislature’s unequivocal intent on the face of the statutes (and confirmed by Ms. Cox and Mr. Harvey), but serve only to highlight the need for a verifiable record of all votes cast, which is impossible with DREs.

### *Conclusion*

While the parties and this Court were hard at work yesterday, the President of the United States, together with the U.S. intelligence community, were acknowledging—yet again—the serious and imminent threat to U.S. elections from sophisticated nation-state hackers who seek to deprive American voters, including in Georgia, of the fundamental right to choose their representatives and other government officials—including, in the next election, the governor of Georgia. Indeed, the U.S. Ambassador to the United Nations has spent 2018 warning against the use of electronic voting machines (e.g., “‘These elections must be held by paper ballots so there is no question by the Congolese people about the results. The U.S. has no appetite to support an electronic voting system’....”<sup>6</sup> Surely Georgia voters deserve a system no less secure than in other countries.

It is not only unthinkable that Georgia would persist with a system that is demonstrably and hopelessly unsecured against such attacks, but it is unlawful

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<sup>6</sup> “US Warns Congo Against Electronic Voting for Delayed Election,” VOA News, (Feb. 12, 2018), <https://www.voanews.com/a/us-warns-congo-against-electronic-voting-for-delayed-election/4250646.html>.



under the U.S. Constitution and Georgia law. The Curling Plaintiffs respectfully submit that the record before this Court supports only one result: granting their motion for preliminary injunction and (i) prohibiting the use of DREs, (ii) mandating the use of paper ballots throughout the election *which must be the ballot of record*, (iii) mandating an appropriate post-election/pre-certification audit relying on the paper ballots, and (iv) prohibiting the closing or reduction of polls or precincts during Early Voting and on Election Day. *Even Fulton County's own witness, Ms. Houston, insisted on (iv) should this Court grant the preliminary injunction requested.*

Ms. Cox acknowledged that over 15 years ago, the great state of Georgia and its many public servants adopted a new, DRE-based system “faster than anyone thought possible.” That was a far heavier lift and far more complicated change than what the Curling Plaintiffs seek regarding paper ballots, which are already in use in Georgia. And importantly, not one state official at yesterday’s hearing—or in Ms. Sullivan’s declaration—said it *cannot* be done. Indeed it can. And if this Court orders it, it will be done, to the extraordinary benefit of every Georgia voter, including those who oppose it.

Dated: September 13, 2018

Respectfully submitted,

/s/ David D. Cross

David D. Cross (admitted *pro hac vice*)

Jane P. Bentrutt (admitted *pro hac vice*)

John P. Carlin (admitted *pro hac vice*)

Catherine Chapple (*pro hac vice* pending)

Robert W. Manoso (*pro hac vice* pending)

MORRISON & FOERSTER LLP

2000 Pennsylvania Avenue, NW

Suite 6000

Washington, DC 20006

Telephone: (202) 887-1500

DCross@mofo.com

JBentrutt@mofo.com

JCarlin@mofo.com

CChapple@mofo.com

Halsey G. Knapp, Jr.

GA Bar No. 425320

Adam M. Sparks

GA Bar No. 341578

KREVOLIN & HORST, LLC

1201 West Peachtree Street, NW

Suite 3250

Atlanta, GA 30309

HKnapp@khlawfirm.com

Sparks@khlawfirm.com

*Counsel for Plaintiffs Donna Curling,  
Donna Price & Jeffrey Schoenberg*

**CERTIFICATE OF COMPLIANCE WITH LR 5.1C, NDGa**

I hereby certify pursuant to LR 7.1D, NDGa that the foregoing document has been prepared with one of the font and point selections approved by this Court in LR 5.1C, NDGa, using a 14-point Times New Roman font.

**CERTIFICATE OF SERVICE**

I hereby certify that on September 13, 2018, I electronically filed the foregoing CURLING PLAINTIFFS' POST-HEARING STATEMENT AND RESPONSE TO DECLARATION OF REBECCA SULLIVAN with the Clerk of Court using the CM/ECF system, which will automatically send email notification of such filing to all attorneys of record, according to the Court's Electronic Mail Notice List.